

Focus On Learning Key

 Read Read through the following information	 Exercise Analyse the information in your work group	 Discuss Go through questions in your workgroup
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A

Participants have been asked to identify atmospheric contaminants that they may be exposed to as a regular part of their duties. The aim of this exercise is to get participants thinking not only about atmospheric contaminants they can see but atmospheric contaminants that they can't see¹.

B

A table listing work tasks, contaminant associated with work task, form of contaminant and the negative health affect associated with contaminant specific to mining has been created to assist participants in identifying what tasks are associated with the hazard. The activity also aims to provide information to the participants about the health effects associated with the contaminant².

C

Once participants understand the possible effects of exposure to atmospheric contaminants, they are ready to assess the possible consequence of exposure to a contaminant to which they are regularly exposed. An example has been provided to guide participants through the activity. Work through the example before moving onto assessing the participant's contaminant.

If the consequence assessment is "red", this provides an opportunity to explore opportunities that may reduce the consequence of exposure³.

D

To complete this exercise, participants will need access to exposure monitoring reports for atmospheric contaminants and a copy of the National Occupational Health and Safety Commission's publication *Adopted National Exposure Standards for Atmospheric Contaminant in the Occupational Environment* (1995).

The intensity of atmospheric contaminants increases the likelihood of a negative health effect. An example has been provided to guide participants through the activity. Work through the example before working with the participants on their identified example. Where the assessment of intensity has been identified as "red", measures to reduce intensity should be explored.⁴

³ International Council of Mining and Metals (2009) *Good practice guidance on occupational health risk assessment*, UK.

⁴ International Council of Mining and Metals (2009) *Good practice guidance on occupational health risk assessment*, UK

¹ Australian Institute of Occupational Hygienists (2007) *Principles of Occupational Health and Hygiene*, C.Tillman, Allen & Unwin, Australia.

² International Council of Mining and Metals (2009) *Good practice guidance on occupational health risk assessment*, UK.

E

Analysing past exposures can determine the effectiveness of some controls. Look for examples where the results were good in the past but not so good in recent time. Exploring the difference between past practices and current practices, may identify the problem. It also allows us to determine if controls that have been implemented over time have had an impact in reducing risk⁵.

F

Assessing Time Weighted Average (TWA) establishes the basic knowledge and skill in assessing if the atmospheric contaminant exposure is under the TWA exposure standard. It also assists participants identifying when they may be approaching the exposure threshold.

The longer we are exposed to an atmospheric contaminant the more likely a negative health effect will occur. Where the length of exposure has been assessed as “red”, measures to reduce the length of time exposed should be explored.

Frequency of exposure can also increase the likelihood of a negative health effect. Where the frequency has been assessed as “red”, measures to reduce the number of times exposures occur should be explored.

An example has been provided to guide participants through the activity. Work through the example before working with participants on their identified contaminants.⁶

G

With some atmospheric contaminants, higher concentration levels can be tolerated for short periods. Only contaminants which have an assessed Short Term Exposure Limit (STEL) value can be assessed for short term exposure limits. In the absence of a STEL value the limit is assessed against a TWA. The longer and more frequent the exposure to an atmospheric contaminant, the greater the likelihood of a negative effect. Where the length of exposure has been assessed as “red”, measures to reduce the exposure length should be applied. An example has been provided to guide participants through the STEL ‘length of exposure’ assessment. Work through the example before working with participants on their identified exposure.⁷

H

Likelihood of a negative effect also increases each time we are exposed to an atmospheric contaminant and so frequency of exposure needs to be assessed. An example has been provided to guide participants through the STEL ‘frequency of exposure’ assessment. Where the frequency of exposure has been assessed as “red”, options to reduce the frequency should be identified and implemented. An example of the exercise has been provided to guide participants through the activity. Work through the example before working with participants on their identified exposure.⁸

⁵ Australian Institute of Occupational Hygienists (2007) *Principles of Occupational Health and Hygiene*, C.Tillman, Allen & Unwin, Australia.

⁶ National Occupational Health and Safety Commission (1995) *Adopted national exposure standards for atmospheric contaminant in the occupational environment*, Australia.

⁷ National Occupational Health and Safety Commission (1995) *Adopted national exposure standards for atmospheric contaminant in the occupational environment*, Australia.

⁸ International Council of Mining and Metals (2009) *Good practice guidance on occupational health risk assessment*, UK



Breaks between successive exposures to atmospheric contaminants allow the body to process and prevent a build-up of contaminant. This build up is referred to as a cumulative exposure. The longer the break between successive exposures, the more opportunity the body has to eliminate the contaminant. Where the break between exposures has been assessed as “red” opportunities to increase break lengths between exposures should be explored. An example has been provided to guide participants through the activity. Work through the example before working with participants on their identified atmospheric contaminant.⁹



The aim of this exercise is to identify the contributing factors that increase the risk of a negative health effect so that a more strategic approach in implementing and assessing controls can occur. An example has been provided to guide participants through the activity. Work through the example before working with participants on their identified atmospheric contaminant.¹⁰

⁹ Australian Institute of Occupational Hygienists (2007) *Principles of Occupational Health and Hygiene*, C.Tillman, Allen & Unwin, Australia.

¹⁰ Australian Institute of Occupational Hygienists (2007) *Principles of Occupational Health and Hygiene*, C.Tillman, Allen & Unwin, Australia.

Acknowledgement

This Focus On has been developed in consultation with various industry stakeholders from the NSW mining industry and endorsed by the NSW Mining and Extractives Industry Health Management Advisory Committee (HMAC). HMAC reports to the NSW Mine Safety Advisory Council and has membership from the NSW Minerals Council, Cement Concrete and Aggregates Australia; CFMEU, AWU, Coal Services, WorkCover NSW, NSW Trade & Investment and an independent health expert.

Disclaimer

The information contained in this publication is based on knowledge and understanding at the time of writing. However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of NSW Trade & Investment or the user's independent adviser.

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